

ABSTRACT

APPARATUS AND METHOD FOR SEPARATING PARTICLES/FLUIDS

An apparatus (10,10') and method for separating a particle stream into particle groups, comprising a dilution treatment chamber (12) defining an upstanding ~~channel (20)~~ passageway (20) to receive a particle stream, such that the particle stream falls toward a first-particle-group outlet (22) in the dilution treatment chamber (12). A transfer chamber ~~easing~~ (13,13') is adjacent and interconnected to the dilution treatment chamber (12), and defines a transfer chamber (30) to receive second particle group. Second-particle-groups outlets ~~(24)~~ of the transfer chamber aperture are laterally positioned with respect to the ~~channel~~ passageway (20) and allow jet (104A) fluid communication there between. A distributor (14A,25,80,90) in the ~~channel~~ passageway (20) is provided to ~~break down~~ spread out the particle stream and to distribute the particle stream over a surface area of the ~~channel (20)~~ dilution treatment chamber (12). Fluid flow apertures (25) create a fluid flow between the transfer chamber (13) (30) and the ~~channel~~ passageway (20) dilution treatment chamber (12) so as to project/entrain second particle group to the transfer chamber (13) (30) with a first particle group remaining in the ~~channel~~ passageway (20) dilution treatment chamber (12) for exiting through the first-particle-group outlet (22) of the dilution treatment chamber. The apparatus (10,10') and method is also used to treat particle streams/fluids. A method and device for separating a stream of particles having a cross sectional area, the stream of particles flowing substantially along a stream flow direction. The method includes: directing a flow of fluid towards the stream of particles, the flow of fluid flowing substantially along a flow of fluid direction, the

5 flow of fluid having a pressure and magnitude such that the
velocity produce a jet of the fluid producing a force
impacting on the particles causing the particles to move in
a direction substantially parallel to the flow of fluid
thereby increasing the cross sectional area and diluting
the previous mass of the particles stream, and the
separating, particles/fluids.

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